U. S. TROPICAL FOREST STATION
and the
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AGRICULTURAL EXPERIMENT STATION
cooperating in

THE PARCELERO SYSTEM

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COOPERATION AND WORKERS

This study is the result of a cooperative project between the Tropical Forestry Station of the United States and the University of Puerto Rico Agricultural Experiment Station. Most of the funds for the investigation were made available by the Puerto Rico Reconstruction Administration. The immediate supervision of field work, as well as that of office work, and the writing of most of the report, was made by Mr. Héctor Zayas Chardón. Records from the parceleros and the statistical summarization were done by Messrs. Efraín Díaz Cruz and Jesús A. Dapena. Mr. Ramón Colón Torres gave instructions on record-taking in the field, and helped in the preparation of the schedule. Mr. Santiago Díaz Pachaco gave instructions on the enumeration of facts on food consumption, counsel in the preparation of that aspect of the questionnaire, helped in planning the statistical summarization of this part of the study, and wrote the part of the report relative to it. Mr. Sol Luis Descartes had the general supervision of the project during its entirety, helped with the planning of the report and tables, reviewed the manuscript, and wrote some sections of the report. Mr. Arthur Bevan, Director of the Tropical Forestry Station, conceived the study, counselled as to the sections desired, participated in the conferences relative to the conclusions and recommendations to be made, and made many very useful suggestions. Mr. Leslie Holdridge, experienced in the actual administration of the parcelero policy, made very pertinent suggestions at the inauguration of the study and during the conferences to draft conclusions and recommendations. He contributed the section on the servicultural aspect of the parcelero, which is included in the report.

GLOSSARY

1. Parcel. An area of non-forest land within a forest unit assigned temporarily to a laborer, under certain conditions, for him to plant and cultivate subsistence crops and to plant and take care of forest trees.

2. Parcelero. The laborer to whom a parcel is assigned.

3. Gross farm income. Sum of the annual receipts from sales, increase in livestock and equipment inventory, farm privileges, soil conservation payment, and labor outside the parcel.

4. Farm expenses. Include cash operating expenses, unpaid family labor, decrease in inventory, and depreciation.

5. Net farm income. Gross farm income minus farm expenses.

6. Net family farm income. Net income obtained after deducting the farm expenses, exclusive of unpaid family labor, from the gross farm income.

7. Net cash income. Includes the annual cash receipts from sales, soil conservation payments, and labor outside the parcel. It is derived by deducting the cash expenses from the cash receipts.

8. Animal unit. One mature horse or cow, or the equivalent in other livestock, based upon the amount of feed consumed, manure produced, or other appropriate conversion factors.

9. Unpaid family labor. Labor used in conducting the farm business, which is furnished by the members of the farm family, other than the operator, for which no direct wage is paid. In this study any male person living continuously with the family and being 16 years of age or over was considered as a unit of family labor supply.

August 8, 1941

THE PARCELERO SYSTEM

INTRODUCTION

There are 6 forest units belonging to the Federal Government in the Island. These are named Luquillo, Toro Negro, Guajataca, Carite, Susúa, and Guilarte (Prieto). The Luquillo Unit is subdivided in 5 main projects. These are El Verde, Pisá, Ciénaga Alta, Sabana, and Del Valle. The Toro Negro unit is composed of three projects: El Guineo, Doña Juana, and Matrullas. The Río Abajo and the Isabela projects form the Guajataca unit. Guavate and Patillas constitute what is known as the Carite unit. With the exception of the Luquillo unit, known as the Caribbean National Forest, and part of Toro Negro unit (Doña Juana), all the other units were bought after 1935 by the Puerto Rico Reconstruction Administration for reforestation purposes. Although these lands belong to the Puerto Rico Reconstruction Administration, they are under the direct supervision of the Forest Service of the United States Department of Agriculture.

At the time when these lands were bought for reforestation purposes a great number of families lived on them. In the majority of the cases those families had been living there for many years cultivating patches of land around their homes. The Forest Service was confronted with the problem of moving them out or developing a plan to establish them permanently at these forest areas. A program known as the "Parcelero Policy" was adopted. This plan provided that lands were to be made available to laborers for them to plant and cultivate subsistence crops. Some of this land was to be used only for agriculture. They were also given forest land to plant and care forest trees planted in rotation with subsistence crops. The final objective was to create forest laborers who would obtain their cash income from the sale

of forest products and grew crops for their own use.

To be established as a parcelero the laborer has to sign a "free use permit" issued by the Forest Service. This permit authorizes him to use and to live on the land assigned to him by the district ranger. In exchange for this privilege he agrees to take care and maintain a certain number of acres of forest plantation. Although it is not stated in the "free use permit" the Forest Service may sell wood to the parceleros for the manufacture of charcoal.

The system was first established in 1937 at Pisá and Ciénaga Alta, in the Luquillo unit and at Doña Juana in the Toro Negro unit. In 1938 it was established at El Verde, Sabana and Del Valle in the Luquillo unit, at El Guineo and Matrullas in the Toro Negro unit, and at Río Abajo in the Guajataca unit. In 1939 the system was established at Isabela, Carite, Susúa, and Guilarte. The system that was first established in 1937 with 69 parceleros had in 1940, the year when this study was made, approximately 800 parceleros.

DESCRIPTION OF THE AREAS

For the purpose of our study an area is composed of the groups of parcels having similar physical environment. In all cases except in one, our areas coincide with the forest units. The Guajataca unit was divided into two areas, Isabela and Río Abajo. This is why our study includes seven areas, although there are only six forest units.

Luquillo Area

The parcels in the Luquillo area are located on hills, slopes and ravines of the Luquillo Mountains. The Luquillo Mountains are located in the northeastern part of the Island. The five main groups of parcels are located at

El Verde, Pizá, Ciénaga Alta, Sabana, and Del Valle. Soils of low and medium productivity rating* are found in all these areas. Sabana silty clay loam with a productivity rating of 8 predominates at El Verde. Catalina stony clay loam with a productivity rating of 6 is the predominating soil at Pizá, although some Guineo clay productivity rating of 8 is found. Ciénaga Alta parcels are located at very steep slopes in which Múcara silty clay loam with a productivity rating of 7 predominates. Some Catalina clay having a productivity rating of 5 is found. At Sabana, Catalina clay is the most important soil found. Del Valle parcels are located in Múcara steep phase and Picacho silty clay loam. These soils have a productivity rating of 8 and 10 respectively. The average annual rainfall in the Luquillo area is over 100 inches. This figure was taken from the rainfall map of Puerto Rico. All the areas except Del Valle can be reached by automobile.

Toro Negro Area

The Toro Negro area is located at the central mountainous part of the Island, 15 or more kilometers north of the town of Villalba. The unit is in the boundary line between the municipalities of Orocovis and Villalba. Part of it is in the barrio Bauta Abajo of Orocovis and part in barrios Villalba Arriba and Guineo of Villalba. The area includes 3 parcelero groups: Guineo, Doña Juana, and Matrullas. The three groups are at elevations ranging from 1,500 to over 2,500 feet. The parcels are located on the steep slopes of the mountains. The annual rainfall is over 80 inches at Matrullas and Doña Juana. At El Guineo it is 111 inches. The months of heavier rainfall are from April

*The productivity rating is a measure of the productivity of the soils, established by the U. S. D. A. It is based on soil profile, relief, erosion, quantity of water received, drainage, and, to a certain extent, on management. The best soils has a productivity rating of 1 and the worst a productivity rating of 10.

to November. Red and yellow podzolic soils of low productivity rating predominate in these areas. El Guineo clay soil with productivity rating of 8 is the most important soil type found at Matrullas and Guineo. Doña Juana, in addition to the Guineo clay soil which predominates, has some Catalina clay of productivity rating of 5. Although the three regions have the same type of soil, soils at El Guineo are worst than those at Matrullas and Doña Juana. At El Guineo, forest vegetation has disappeared due to continuous clearing. Cultivation has been carried on for many years without giving the soils any rest or any aid in the form of fertilizers. At Doña Juana and Matrullas, soils once were in the same condition as they are now in El Guineo. Due to the improductivity of the soils, cultivation was abandoned, giving a chance to brush and forest vegetation to cover the area. At the present time these soils, after proper clearing, will raise some crops for a limited number of years.

Río Abajo Area

Río Abajo is located in the limestone belt of the northern part of the Island. It is about 15 kilometers south of Arecibo. It includes part of barrio Río Arriba of Arecibo and parts of barrio Río Abajo and Santa Rosa of Utuado. The area is composed mainly of brush covered haystack hills with valleys in-between. Only in these valleys, of all the areas studied, were found soils of good productivity rating in fairly large areas. Agriculture is confined to these valleys. The percentage that these good soils constitute of the total area in parcels is higher than in any other of the areas studied. Soller clay loam with a productivity rating of 8 is the predominating soil in the hills, and near the brook and in the valleys between the hills Camaguey clay loam with productivity rating of 8 is found. Moca clay, Cialitos clay, and

Lares clay with a productivity rating of 5, 7, and 8 respectively are also found. Tanamá silty clay (colluvial and steep phases) and Múcara silty clay loam steep phase both with productivity rating of 8 are found in some parts of the area. The annual rainfall at Río Abajo is 78 inches, falling mainly from March to November. This is the average of three-year records taken by the Weather Bureau at that area. The area is easily reached by a road constructed by the Puerto Rico Reconstruction Administration.

Isabela Area

The Isabela area is also located in the limestone belt of the northern part of the Island. The area is mainly located at barrios Llanada, Planas, and Galateo of Isabela. The area is found nearly 15 kilometers to the southeast of Isabela. It is crossed by a road constructed by the P. R. R. A. It is nearly equidistant from the towns of Isabela and San Sebastián. In this area the hills are closer and steeper; no valleys are found as in Río Abajo; the spaces in-between the hills are sinkholes (abras). In the sinkholes Tanamá stony clay (colluvial phase) productivity rating of 8 predominates. The hill soils are the Tanamá stony clay with a productivity rating of 10. The annual rainfall at Isabela is about 66 inches, according to records of the Weather Bureau taken in the last two years.

The parceleros system at this area differs from the other areas. Ninety-one per cent of the parceleros live outside the parcel (table 19). They live in a small village called Villa Ponce, near the forest area. Nearly all the parcels at Isabela consist of small patches of land planted to coffee. These patches of land are the sinkholes and usually the size of the sinkhole is also the size of the parcel. In the majority of the cases these pieces of land

have been used by the parceleros for many years before the land was bought by the Forest Service. The coffee is harvested every year by the parcelero and usually it is sold at Isabela and Aguadilla. In order to obtain work with the Forest Service the parcelero is obliged to plant another plot of land in which he grows some minor crops as sweet potatoes, beans, or corn. Usually this additional plot of land is of the same size as the coffee land under his care.

Carite Area

The Carite area is located in the central mountainous part of the Island, at an elevation approximately from 800 to over 2,000 feet. The unit is located in the boundary line between the municipalities of Cayey, Patillas, and Caguas, about 25 kilometers south of Caguas. It comprises part of barrio Guavate and Parallón of Cayey and barrio Río Arriba of Patillas. The area is divided in two groups, called Guavate and Patillas. Both groups are reached by roads constructed by the P. R. R. A. The road going to Guavate starts at the military road near Cayey. The road going to Río Arriba starts at the Insular road No. 3 around one kilometer beyond Patillas. The parcels in the Carite area are located on the very steep slopes of the mountains and hills of the area. The soil predominating in Guavate is Guineo clay with a productivity rating of 8. At Patillas, Múcara silty clay loam with a productivity rating of 8 is the most important soil.

The Weather Bureau has no records of annual rainfall for the specific regions where the parcels are located in the Carite area. The nearest stations of the Weather Bureau are located at Carite Camp, near Guavate, and at Patillas Dam, near Patillas. The annual rainfall at Carite Camp is about eighty two inches and at Patillas Dam about sixty-three inches. The

records of Carite Camp can be applied to the Guavate region, since the elevation and climate in both places are equal. The records of Patillas Dam cannot be applied exactly to the parcels, since the parcels are at a higher elevation than the Patillas Dam. It is logic to think that the annual rainfall at the Patillas parcels should be higher than at Patillas Dam.

Guilarte Area

The Guilarte area is the only area that cannot be reached by road. It is located about 12 kilometers to the southwest of Adjuntas, in the central mountainous part of the Island between the municipalities of Adjuntas, Peñuelas, and Guayanilla. The area is found in barrios Guilarte and Garzas of Adjuntas; barrio Pasto and Jagua of Guayanilla and barrio Macaná of Peñuelas. The elevation of the area is around 2,000 feet. Los Guineos clay, with a productivity rating of 8, predominates in the area but rough stony land with a productivity rating of 10 and Cialitos soil eroded phase with a productivity rating of 9 are also found. In the records of the Weather Bureau taken at the Garzas Hydroelectric Project that is near the parcels, the average annual rainfall during four years have been 91 inches.

Susúa Area

In the west central part of the Island, between Yauco and Sabana Grande, is found the Susúa area. The area is about 10 kilometers northwest of Yauco, mainly on barrio La Torre of Sabana Grande and Susúa Alta and Collores of Yauco. The area is found in the hilly section between the costal lowlands and the mountains. Rosario soils of serpentine derivation predominate in the area. These soils have a productivity rating of 10. Along the river, though in very small patches, San Antón loam, with a productivity rating of 1, is found.

The aggregate area of this soil is very small. The area is the driest of all the areas studied. The annual rainfall is from 40 to 50 inches, according to the rainfall map of Puerto Rico. This area is reached from Sabana Grande or Yauco by a road constructed by the P. R. R. A.

THE "PARCELERO" AND HIS FAMILY

In August 1940 when the records for this study were taken, there were approximately 795 parcels. Records were taken of 405 parcels, making a 50.6 per cent sample (table 1). In the 405 parcels there were only 402 families. This was due to the fact that in three cases there were two members of the same family having different parcels. Twenty-nine per cent of the families studied were from Luquillo area, 23 per cent from Toro Negro, and 15 per cent from Río Abajo (table 2).

Origin

Eighty-six per cent of the parcelero families originated at the same "barrio" or other "barrio" of the municipality where the forest unit stands. The percentage of families coming from other municipalities consisted mainly of families coming from nearby barrios of contiguous municipalities (table 3).

Age

The average age for all parceleros was found to be 40 years. Twenty-nine per cent had from 31 to 40 years. Twenty per cent had over 50 years of age. (table 4).

Illiteracy

The percentage of illiteracy among parceleros was 47 (table 5). This percentage is lower than the percentage of illiterate laborers in the tobacco,

coffee, and fruit regions of Puerto Rico (table 6). In those regions 59 per cent of the laborers were found to be illiterate, but the study was made in the years 1936. The lowest percentage of illiteracy among parceleros was found at Toro Negro. The highest percentage of illiteracy was found at Río Abajo and Carite. This was probably due to the lack of schools in the vicinity.

Farming Experience

More than three-fourths of all the parceleros had over 10 years of farming experience. The average number of years of farming experience among all parceleros was 21 (table 7). Previous to their establishment 94 per cent of the parceleros had been working in agriculture as laborers or share-croppers (table 8). The percentage who had been working in none agricultural occupations before being established as parceleros was negligible.

Civil Status

Of all the parceleros 61 per cent were civilly or eclesiastically married, 26 per cent were consensually married, 5 per cent were widowed or divorced, and 8 per cent were single men (table 9). In the majority of the cases this single men had to support a family consisting of their mother, sisters and younger brothers. Comparing married parceleros with the married agricultural laborers in the tobacco, coffee, and fruit regions in the Island (1936) we found that the percentage of parceleros consensually married was higher than that of agricultural laborers (table 6).

Size of Family

The average number of persons per parcelero family is 6.3 (table 2). Twenty-nine per cent of the parcelero families consisted of 8 or more members.

These facts are similar to the condition found in the tobacco, coffee, and fruit regions (1938) where the average size of the family was 6.0 and the percentage of families with 8 or more members was 27 (table 6). The average number of persons per family ranged from 5.4 at Carite to 7.3 at Río Abajo (table 2). In relation to this it is interesting to note that the largest average size of houses was found at Río Abajo while the lowest was found at Carite (table 14). The average number of children living in the parcelero houses was 3.1 (table 11). Nine per cent of all the parcelero families had no children, 52 per cent had from 1 to 3 children, 32 per cent from 4 to 6, and 7 per cent had over 6 children. The highest percentage of families without children was found at Susúa and the lowest percentage was found at Luquillo. Río Abajo led in families with more than 6 children, while Carite had the lowest percentage of families with more than 6 children.

Schooling of Children

Half of the children 7 to 14 years of age were not attending school during 1940-41 course (table 12). Twenty-eight of the children not attending school had never attended one. Río Abajo and Carite had the highest percentage of children 7 to 14 years of age with no schooling at all. This situation was worst at Río Abajo where 48 per cent of the children in those ages had never attended school. In our interview with the parceleros at Río Abajo one of the principal complaints was the lack of schools where they could send their children.

HOUSING CONDITIONS

Type of House

Housing conditions of the parcelero on the forest area were extremely poor.

Forty-four per cent of all the parcelero houses were "bohíos", that is, houses built completely of straw or palm sheaths (table 13). Only 32 per cent of the agricultural laborers families living in the coffee, tobacco, and fruit regions lived in "bohíos" (table 6). The highest percentage of "bohíos" was found at Carite while the lowest was found at Río Abajo, Isabela, and Sustía. Seventeen per cent of the houses were timber straw-roofed houses; 38 per cent were timber iron-roofed houses and 1 per cent were houses constructed by the Forest Service.

Size

The floor space was less than 200 square feet in 59 per cent of all the houses (table 14). This percentage is nearly the same as for agricultural laborers of the coffee, tobacco, and fruit regions in 1936. Thirty-two percent of the parcelero houses had from 200 to 299 square feet of floor space compared to 24.5 per cent for agricultural laborers. Fourteen and six tenth per cent of the houses of the agricultural laborers had over 299 square feet while only 9 per cent of the houses of the parcelero were over this size (table 6).

Persons per Room

Parceleros live more crowded in their houses than the agricultural laborers from the tobacco, coffee, and fruit regions. The average number of persons per room in the parcelero houses is 3.2 compared to 2.6 in the agricultural laborers house in 1936 (table 6). Río Abajo had the highest number of persons per room while Carite had the lowest (table 15). This has an apparent direct relation with size of house, since as it was previously said, Río Abajo had the largest sized houses and Carite the smallest ones.

Water Supply

Brooks or wells constituted the source of water of 56 per cent of the parceleros families, springs 38 per cent, and other sources 6 per cent (table 16). In this respect they were in a better condition than the agricultural laborers of the coffee, tobacco, and fruit regions, since 38 per cent of them obtained their water from springs, which are a good source. Eighty-six per cent of the agricultural laborers obtained their water from streams of wells and only 14 per cent from other sources as springs and aqueducts (table 6).

Sanitary Facilities

Sanitary facilities in the forest areas were better than those found in study of agricultural laborers from the tobacco, coffee, and fruit regions. Sixty-three per cent of the parceleros houses had latrines while only 46.4 per cent of the agricultural laborers houses had that sanitary facility in 1936 (table 6). In the majority of the cases the latrine of the parcelero house had been constructed by some government agency.

Distance from Roads

The average distance from parcels to roads was 1.8 kilometers (table 18). Forty-one per cent of the parcels were less than 1.0 kilometer from the road. Fifteen per cent of the parcels were at a distance over 3.0 kilometers from the road. Three kilometers was the average distance from the parcels at Guilarte to the nearest road. The average distance from parcels at Río Abajo to the nearest road was 0.7 kilometer.

(table 19).

Fifty-one per cent of the parceleros live on the parcels./ Twenty-two per cent of the parceleros living outside the parcel live at a distance of 2 kilometers

or over. Seventy-six per cent of the parceleros at Isabela live at a distance of two kilometers or over from the parcel. Only 1 per cent of the parceleros at Río Abajo living outside of parcel lived at a distance of 2 kilometers or more. The highest percentage of parceleros having their house on the parcel was found at Río Abajo, the lowest at Isabela.

OPERATION OF THE PARCEL

Years Parcels have been Established

This study comprises a year beginning in September 1939 and ending in August 1940. The parcelero system was first established at the Luquillo and Toro Negro areas in the year 1937. It was found that 40 per cent of the parceleros at Luquillo and 62 per cent of those at Toro Negro had worked their parcel for more than two years (table 20). In the year 1938 the system was established at Río Abajo. In that area it was found that 42 per cent of the parceleros had worked the parcel for more than two years. In the other four areas, Isabela, Carite, Susúa and Guilarte, the system was established in 1939.

There is an apparent discrepancy between the official date in which the system was established in some areas and the time the parceleros had been working their parcels. According to the official date of the establishment of the system there should not be any parceleros who had worked their parcels for more than two years in Isabela, Carite, Susúa, and Guilarte. In all areas except Guilarte there are parceleros who had worked their parcels for more than two years. In those cases what happened was that the parcelero had been previously working the land where his parcel is now established. The best example of this is Isabia; officially the system was established in 1939, but according to our records in August 1940, over half of the parceleros had worked

the parcel for more than two years.

Size of Farm

The average size of the parcels studied was 6.3 cuerdas (table 2). Only 17 per cent of the parcels had over 9 cuerdas. The average size of parcels varied from 2.2 cuerdas in Isabela to 10.0 cuerdas in Río Abajo. Fifty-one per cent of the parcels at Río Abajo had over 9 cuerdas. It should be remembered that with the exception of Isabela, records of parcels with less than 3.0 cuerdas were not taken. Therefore, the average size of all parcels is less than the average shown by this study. The exception of Isabela was made because in that area eighty per cent of the parcels have less than 3.0 cuerdas.

Cuerdas Harvested

On the average, 3.65 cuerdas were harvested per farm (table 22). Río Abajo harvested 6.93 cuerdas while Carite harvested only 1.64 cuerdas per farm. Beans, corn, bananas, sweet potatoes, and coffee constituted nearly three-fourths of the cuerdas harvested (table 24). According to the number of cuerdas harvested, beans and corn were the most important crops in 5 of the 7 areas studied. In Isabela coffee was the first crop in importance and it constituted 42 per cent of the cuerdas harvested. At Toro Negro 30 per cent of the cuerdas harvested were in coffee and 45 per cent were in bananas.

Yield per Cuerda

In general, the average yields per cuerda were very low (table 25). The average yield for beans was 125.0 pounds. It ranged from 79 pounds at Guilarte to 173 pounds at Carite. Production of corn averaged 277 pounds. The highest production, 463 pounds, was obtained at Río Abajo and the lowest, 171 pounds, was obtained at Guilarte. Bananas produced in the average

approximately 15,000 bananas per cuerda. This average ranged from 7,200 bananas at Isabela to 17,400 bananas at Luquillo. The yield of bananas compared very well with the yields in the various groups of small farms studied by the Insular Experiment Station. In fact, it was better than in two of the groups studied. Sweet potatoes produced in the average 13.7 quintals, ranging from 12.9 quintals at Río Abajo to 19 quintals at Isabela. The average production of coffee was 104 pounds. At Toro Negro, with the lowest production, the yield was 91 pounds and at Isabela it was 116 pounds.

As a rule, yields were much lower than the yields obtained in other groups of small farms studied by the Insular Experiment Station (table 26). The only area where tobacco was of any importance was at Río Abajo, where the best soils are found. In addition to that the "parceleros", as practically all tobacco growers in the Island, used fertilizers. The average yield of tobacco in Río Abajo was higher than in three of the six groups of small farms surveyed by the Agricultural Experiment Station. It was almost equal to the yield in the Isabela-Aguadilla section (1934-35), but it was nearly 200 pounds below the yield in the 194 tobacco farms studied. The average yield of tobacco in Río Abajo was also lower than the average yield in 96 P. R. R. A. farms, located in the American Suppliers land.

Value of Crop Production

The average value per parcel of the crops harvested was $43.55 (table 27). Fifty-four per cent of this value was used by the parcelero family, 34 per cent was sold, and 12 per cent was fed to livestock and given other uses. The value of the crops harvested at Río Abajo was much higher than in any other area. The average value per farm of the crops harvested at Río Abajo was $108.84 while Carite, the area next to it in value of crops harvested,

was only $58.23. The average value of crops per cuerda harvested was too low in all areas (table 27). It amounted, on the average, to $11.94 and ranged from $7.05 at Susúa to $15.71 at Río Abajo.

The value of bananas was one-fourth of the total value of all crops harvested (table 28). The value of tobacco constituted 11 per cent of the total value of all crops harvested, beans 10 per cent, coffee and sweet potatoes 9 per cent each, and plantains, corn and dasheens 6 per cent each. The value of bananas, beans, sweet potatoes, and dasheens constituted more than 50 per cent of the total value of all crops harvested at Luquillo and Carite areas. At Toro Negro three-fourths of the total value of all crops harvested was in bananas and coffee. Nearly one-half of the total value of crops at Isabela was in coffee. The only area where tobacco was of importance was at Río Abajo where together with bananas it constituted about 50 per cent of the total value of all crops harvested. At Guilarte bananas and beans were the most important crops. Some coffee was also harvested. At Susúa the most important crops were pigeon peas, yucca, corn, and beans.

Crop sales constituted 34 per cent of the total value of all crops (table 29). The highest percentage sold was at Río Abajo, with 58.4 per cent, the lowest at Guilarte with 7.1 per cent. All the tobacco harvested was sold. Sixty per cent of the total value of plantains was sold. One-third of the total value of bananas and corn and about one-fourth of the total value of taniers, beans, and coffee were also sold.

Sources of Gross Receipts

Labor off parcel was the most important source of income of the "parcelero". It constituted 58 per cent of the total receipts (table 30). Farm privileges were about 29 per cent of the total receipts while crops sold were 6.7 per cent.

Animals Kept

The number of animal units per farm was extremely low. The average per farm was 0.64 (table 29 a). Luquillo with 0.92 animal units followed by Río Abajo with 0.90 and Sueña with 0.86 were the areas reporting a highest number of animal units. Toro Negro with 0.26 reported the lowest number.

Ninety-five per cent of all the parceleros reported that they have poultry, 52 per cent swine, 18 per cent cattle, 14 per cent horses, 15 per cent goats (table 29 b). The percentage of parceleros having poultry was high in all areas. The average size of the farm flock was around 12 chickens. Luquillo and Río Abajo led in parceleros having cattle and swine while at Toro Negro the percentage having cattle and swine was very low. The highest per cent of parceleros having horses was found at Guilarte. Isabela with 35 per cent had the largest number of parceleros possessing goats. Only 55 per cent of the parceleros had their animals in the parcel. In nearly all the cases these parceleros living outside the parcel kept their animals at the places where they live. These facts show that the greatest promise of increasing animal production lies in emphasis on poultry and swine. Goats should only be promoted in Isabela.

The remainder 6 per cent was provided by livestock and livestock products sold, soil conservation payment, livestock increase in inventory, and forest products sold. Only one per cent of the total receipts was provided by forest products sold.

Labor Off Parcel

The average received by each parcelero from work outside of parcel was $128.44 (table 31). Ninety per cent or nearly $115.00 were provided by the Forest Service. About $6.00 were provided by other Insular of Federal agencies and the remaining $7.00 by private businesses. Río Abajo and Guilarte had the highest per cent of labor off parcel provided by Federal and Insular agencies. This is due to the fact that the two areas are near the two hydro-electric projects of Dos Bocas and Garzas respectively. Isabela and Susúa had the highest per cent of labor off parcel provided by private concerns. This is due probably to the location of those areas near sugar cane sections.

Farm Privileges

Farm privileges included crops produced by the parcel and used by the family, livestock and livestock products used, charcoal or firewood used, timber obtained from the farm and the rental value of the dwelling. The rental value of the dwelling was only included when the parcelero had his house located in the parcel.

Farm privileges for all areas averaged $63.19 (table 33). Crops constituted 37 per cent of the privileges. Other important sources were charcoal or firewood used, with 34 per cent, and use of dwelling, with 17 per cent (table 31, appendix).

Farm Expenses

Nearly 62 per cent of the total expenses were in labor of which 49 per cent were in unpaid family labor and 13 per cent in hired labor (table 34). Repairs, interest and depreciation of buildings and equipment constituted 14 per cent of the expenses. Twelve per cent of all expenses were used in buying seeds, fertilizers and livestock. Nearly 45 per cent of the total expenses were in cash (table 32, appendix). Total farm expenses averaged $53.21 and ranged from $25.05 in Isabela to $89.60 in Río Abajo (table 35).

Gross and Net Farm Income

The average gross farm income for all areas was $221.31 (table 35). The area with the lowest gross farm income was Isabela and the area with the highest gross farm income was Río Abajo. The average net farm income was $168.10. It ranged from $142.84 at Guilarte to $248.19 at Río Abajo.

Net Family Farm Income

The average net family farm income was $194.30 (table 35). The difference between the net farm income and the net family farm income is due to the fact that in finding the net family farm income the unpaid family labor is not included as an expense. This is slightly higher than the average annual income per family of the agricultural workers in the tobacco, coffee, and fruit regions of Puerto Rico (table 6). In the case of the agricultural laborer, the annual income in 1936 was $171.29. In this figure the rental value of dwelling is not included while in the case of the parceleros it is included. The average rental value of dwelling per parcelero was $10.57 (table 33).

Net Family Farm Income less Work Off Parcel

If we deduct from the net family farm income $128.44 of labor outside the

parcel we have that in the average only $65.86 were obtained from the parcel (table 35). The only two areas in which the net farm income, exclusive of the labor outside the parcel was higher than this average were Río Abajo and Luquillo. Even in this two areas a sharp difference was found since at Río Abajo the net farm income less the income from work off parcel doubled that of Luquillo. In Río Abajo it was $161.41 and in Luquillo $70.62. The other five areas were considerably below the average, specially Susúa and Guilarte. At Susúa the net farm income less the income from work off parcel was $21.17 and at Guilarte it fell to such an extreme low figure as $9.73.

Net Cash Income

The average net cash income for all parcels was $129.80 (table 35). The area with the highest net cash income was Río Abajo, with $184.96. Carite, with $111.18, had the lowest net cash income.

Río Abajo was the only area where the net cash income was higher than the income received from labor outside the parcel. That shows that at Río Abajo was the only place where the parcel provided some cash income in addition to the farm privileges. In all other areas the "parceleros" had to use part of their income from outside labor to operate their parcel. But in exchange for this they obtained products for home use.

VARIATIONS IN NET FAMILY FARM INCOME

The 405 parcels studied were sorted on the basis of net family farm income into three groups. Those having less than $150, those with $150 to $249, and those with $250 and over. One-third of all the parcels studied had net family farm income of less than $150, half fell in the group from $150 to $249, and only 18 per cent was above $250 in net family farm income (table 36). The worst situation in regard to net family farm income occurred in Carite where 40 per cent of the farms had less than $150, in Isabela where 53 per cent of the farms, and in Guilarte with 45 per cent. The best situation existed in Río Abajo where 63 per cent of the farms had more than $250 in net family farm income. In Luquillo 18 per cent of the farms were in this income group.

The characteristics of the farms found in the various income groups were studied with the purpose of discovering the most important factors associated with the higher incomes. The groups with the highest net family farm income in the areas used in this study are larger parcels, as measured by total cuerdas, in three of the four areas (table 37). In all the cases cuerdas harvested were much larger, farm privileges were larger, and income from labor off farm was higher. The supply of family labor was higher in the groups with the highest net family farm income. Therefore, the factors that should be studied in the attempt to find out to what extent can they increase net family farm income are size of parcel, as measured by total cuerdas, cuerdas harvested of crops, income from labor off farm, and supply of family labor.

FACTORS ASSOCIATED WITH VARIATIONS IN INCOME BETWEEN PARCELS

Size of Parcel

Cuerdas harvested of crops increased as size of the parcel increased (table 38). There was one exception, a decline in the number of cuerdas harvested in the middle-sized group in Toro Negro. Value of crops sold increased, as size increased, only in Río Abajo. Farm privileges tended to increase as size of parcel increased but in a very slight degree. The value of unpaid family labor increased in relation with size except in Río Abajo. There was no relationship between size and net farm income, but there was a consistent increase in all three areas in net family farm income as size increased. Therefore, the biggest advantage of a larger-sized parcel appears to be the possibility of a better utilization of available family labor. The drop in net family farm income in the largest-sized group in Toro Negro compared to the middle-sized group is readily explained by the inability of the parceleros in this group to utilize family labor because there was very little available.

Income strictly from farm operations, that is, net farm income and net family farm income less work off parcel, increased as the size of the parcel increased. The most pronounced increment occurred in Río Abajo.

The conclusion from this analysis is that it is wise to increase the size of parcels, provided parcelero families have available family labor and where more land can be planted and harvested. Increasing the size of the parcel will be more effective as a means of increasing income in parcels located in lands of agricultural productivity.

Cuerdas Harvested

In Luquillo and Toro Negro there was practically no relationship between cuerdas harvested and net farm income, and only a very slight relationship with net farm family income (table 39). In Río Abajo there were significant increases in net farm family income as net cuerdas harvested increased. This indicates that where the agricultural possibilities are fairly good, such as in Río Abajo, there is good reason to expect higher returns by harvesting additional land.

In the computation of both net farm income and net family farm income labor off the farm is included as a receipt. Therefore, because of the importance of that factor it may prevent the observation of relationship between cuerdas harvested and returns. In order to observe the effect of a larger acreage harvested of crops upon income strictly from farming operations, the net farm income and net family farm income less work off farm were calculated. After this adjustment there were significant increases in net family farm income in the three areas. The biggest increase occurred in Río Abajo.

The logical conclusion from these facts is that the more cuerdas the parcelero harvests in a fairly good area, the higher the income. Increasing the number of cuerdas harvested will pay more in these areas with better lands.

Labor Off the Farm

There was no relationship between income from labor off the farm and size of the parcel, neither there was any relationship with number of cuerdas harvested except in Toro Negro (table 40). In that area the higher the income from labor off farm, the lower the number of cuerdas

harvested. Supply of family labor available for work in the parcel was very limited in that area. As was to be expected, net farm income and net family farm income increased as income from labor off farm increased in all areas. There was no relationship of labor off parcel with income strictly from farming (as measured by net farm income and net family farm income less work off farm).

The conclusion is that the amount of labor provided off the parcel should be regulated by the agricultural possibilities of the parcel and by the supply of available family labor.

Supply of Labor

There is evidence that parcels occupied by the families with a slightly larger supply of labor were slightly larger and had more agricultural land, according to the Forest Service classification, in Luquillo and in Río Abajo (table 41). The number of cuerdas harvested were also larger in parcels where the family had a higher labor supply.

Any male person living continuously with the family and being 15 years of age or over was considered as a unit of family labor supply. The parcelero families in the two areas were subdivided into two subgroups, one with less than one unit of available labor supply, and the other with one or more units. Income from work off parcel was higher in parcels having more family labor available. Net farm income was higher in the parcels operated with one or more units of family labor in Río Abajo but was lower in Luquillo. Net family farm income less work off the parcel increased in the group with larger family labor supply.

The conclusion to the analysis is that given a parcel with enough land suitable for crops and opportunities for outside labor, families with the larger labor supply should be favored in the establishment of parcels.

FACTUAL SUMMARY

The Parcelero System was created to take care of families found in the forest lands when these were purchased, to utilize agricultural land found scattered around the forest land, and to develop a system whereby the planting and caring of forests would be less expensive.

The parcels are located in seven areas, namely, Luquillo, Toro Negro, Río Abajo, Isabela, Carite, Guilarte, and Susúa.

The system was inaugurated in 1937 at Luquillo and Toro Negro. In 1938 and 1939 it was extended to the other areas.

Eighty-six per cent of the parcelero families originated in the same barrio of the same municipality where the forest unit is located.

The average parcelero age was found to be 47 years, the largest group, 29 per cent, is from 31 to 40 years old.

About 75 per cent of the parceleros had over 10 years of farming experience. Only 4 per cent of the parceleros were not agricultural laborers prior to their establishment as parceleros.

Twenty-six per cent of the parceleros were consensually married and 61 per cent were civilly or ecclesiastically married. The percentage of consensually married parceleros is higher than that of agricultural laborers, according to a P.R.R.A. survey conducted in 1936 in the coffee, tobacco, and fruit regions.

The average size of the family was 6.3. The family consisted, on the average, of 3.1 children, the parcelero, his wife, and some other person

living in the house.

In general, few educational facilities for children were found in the forest areas. Half of the children from 7 to 14 years of age were not attending school during 1940-41 course. More than one-fourth of the children had never attended school. Lack of school facilities were specially acute in the Río Abajo area.

Housing conditions were very poor. Small, flimsy, all straw houses, known as "bohíos", are the dwellings of 44 per cent of the parceleros. The housing situation among parceleros is worse than that of agricultural laborers studied in 1936. Crowding is more serious, with 3.2 persons per room for parceleros; to 2.8 persons per room for laborers.

Brooks or wells were the sources of water supply of 56 per cent of the parceleros; springs of 38 per cent.

Government agencies had improved greatly the sanitary facilities of the parceleros by the construction of latrines, found in 63 per cent of the parcels.

All the areas except Guilarte can be reached by roads, but the average distance between parcel and road is 1.8 kilometers. The worst situation exists in Guilarte, where 50 per cent of the parcels are at more than 2 kilometers from the road.

Half of the parceleros live outside the parcel and about one-fourth of them live at a distance of 2 kilometers or more from the parcels.

The average size of the parcels was 6.3. The largest parcels were found in Río Abajo (over 10.0 cuerdas), and the smaller in Isabela with 2.2 cuerdas. On the average, 3.65 cuerdas were harvested per farm.

Soils were generally poor in all the areas except at Río Abajo, where

soils of high productivity rating were found in fairly large areas in the valley between haystack hills.

Beans, corn, bananas, sweet potatoes and coffee were the most important crops harvested in the forest areas.

The average yield of crops, except bananas, were extremely low, much lower than yields obtained in other groups of small farms studied by the Agricultural Experiment Station.

Fifty-four per cent of the value of the crops harvested was used by the parceleros and 34 per cent was sold. The average income from crops per cuerda of crops harvested was $11.94 and ranged from $7.03 in Susúa to $15.71 in Río Abajo.

The most important source of income of the parceleros was labor off parcel. It constituted 58 per cent of gross receipts and averaged $128.44 per parcel. The Forest Service provided 90 per cent of the income from labor. The per cent of the total receipts provided by forest products sold was insignificant.

Farm privileges averaged $63.19 per parcel, of which crops produced amounted to $23.62, forest products used to $21.48, and $10.67 to the rental value of the dwelling.

The average net family farm income was $194.30. Only $65.86 were produced by the parcel; the remainder, $128.44 was labor off parcel. At Guilarte the parcel produced only $9.73 while at Río Abajo it produced $161.41. Net cash income averaged $129.80 and ranged from $111.18 in Carite to $184.96 in Río Abajo.

CONCLUSIONS

1. Puerto Rico is a very densely populated Island. Good level lands are scarce. A very large proportion of the Island is rugged mountain land. The pressure of population, however, has pushed up agriculture to most of the hilly lands. Density of population and scarcity of good land make it imperative to use in agriculture all the agricultural land that there is available. Due to the great variation in soils, some land suitable for agriculture is found scattered throughout the lands bought by the forest service. There are families willing to cultivate these lands. It is to the best advantage of the Island that they should do so. Furthermore, the establishment and care of a forest in the tropics is extremely expensive. It is possible, silviculturists affirm, to reduce these costs by entrusting the planting and care of the forest to parceleros. For all these reasons it is concluded that the parcelero system was conceived and developed to meet a very definite need in the Island. It is thoroughly justified from the economic as well as from the forestry point of view.

2. However, the parcelero system developed to take care of people found in the forest areas is not justified unless it provides at least an equal, but preferably a higher standard of living than that of other agricultural laborers in neighboring areas. This study has shown that a large percentage of the parcelero families surveyed have net family farm incomes lower than those of the incomes of agricultural laborers in the coffee, tobacco, and fruit regions of the Island. There is no reason for the Government to promote a settlement program such as the parcelero system, unless it can improve existing conditions.

The first essential in the reorganization of the parcelero system should be to establish a minimum standard of income for the parcelero families. It should take into consideration the value of the products that these families can raise for sale or consumption, and other cash income, either from labor in the forests until these are established, or from products from the forests afterwards.

The parcelero program should be established in such a way that the parcelero families receive annually not less than the equivalent of $250 as net family farm income. This income should come from three different sources, as roughly follows:

(1) Cash income (either labor off the farm or cash from the sale of forest products)	$150
(2) Net value of all products sold or consumed, crop and animal products sold or used at home	75
(3) Estimated rental value of dwelling	25
Total	$250

This $250 standard is recommended as temporary. The permanent standard could be set more in accordance with the income of agricultural laborers in the coffee and tobacco regions of the Island, after the study of income and expenditures of wage earners now being conducted by the W. P. A. is finished.

3. The parcelero system was started in the Luquillo area. It was later extended to somecother areas very dissimilar both in physical factors and as to the customs of the people relative to the exploitation of the land. The variable conditions existing in some of the forest areas did not receive sufficient attention. The second general conclusion from this study is that the parcelero system requires great flexibility in order to adapt it to the different situations that may be found in some of the areas.

4. The parcel should consist, in all sections where this is practicable, of a piece of agricultural land which will be capable of continuous use in crops, and a section of land which will be used for crops and quickly growing timbers in a rotation. This area should of necessity be fairly large.

5. Even lands fit for permanent agricultural use in the forest reserves will generally produce low yields. In the rotated land yields will also be low, probably lower, than in the permanent agricultural land. The low productivity of the soils found in most of the areas where parcels have been established points to the desirability of increasing the size of the parcel in order to allow the minimum income standard.

6. The income from forest exploitation, even when carefully regulated and scientifically planned, is low per unit of land. For this reason the parcel under the direct care of the parcelero would probably have to be unmanageably large, if it were to provide for a set minimum income. Therefore, the parcelero should be permitted in some regulated way to gather, prepare, and sell products from the government forest lands not a part of his parcel. There is need for a change in the regulations to make this possible. In some areas the cash income can be increased by making forest products available to the parcelero. This can be done at the Luquille area, and to some extent, at the Toro Negro and Guilarte areas. In the other areas where forest products are not yet available cash income can only be furnished by providing more labor off the parcel by the forest service.

7. It is of extreme importance that the parcelero and his family live on their parcel. It is difficult for a man living outside his parcel to pay the necessary attention to it. Family labor is seldom used when the parcelero family lives outside the parcel. Petty thievery of the products

raised is prevented to a great extent when the parcelero lives on his own parcel. For all these reasons it is recommended that whenever possible the parceleros should be required to live on their parcels. Exceptions might be made where the ruling conflicts with set patterns of living in village communities, or when its enforcement may unduly increase the cost of making certain social services, such as education and medical attention.

8. Housing conditions need considerable improvement. It is doubtful that the parcelero, if left alone, will be able to improve his house. The aid of the Forest Service is needed. It is recommended, however, that it be limited to the furnishing of the building materials, guidance as to the best place to establish his house, instruction as to the layout of the house and the best construction methods. The parceleros should furnish all the labor required in building the house, preferably should do as much himself as possible. In this way it is hoped that the cost of houses will be greatly diminished, thereby making it possible to help a much larger number of persons.

9. Provisions should be made to resettle the families that will have to be moved out of the forest areas where they are now established as parceleros, if the recommendations of this study are followed.

10. At Susúa the parcelero system should be discontinued. In that area the predominating soils are the Rosario soils which are not suitable for agriculture. The small patches of alluvial soil along the river do not provide sufficient land to establish good sized parcels. Furthermore, the area is too dry.

11. In El Guineo section in the Toro Negro area low productivity rating soils and extremely high rainfall make the establishment of a parcelero system nearly impracticable. The system should be discontinued in that area.

12. In Del Valle section of the Luquillo area the parcelero system should be also discontinued. In addition to soils of low productivity, all lands are covered with grown up trees which makes agriculture very difficult. Transportation facilities to this area are extremely difficult.

13. In the Doña Juana and Matrullas sections of the Toro Negro area a temporary parcelero system should be established to use some land while the forests are established. The low productivity of soils will not permit the establishment of a permanent system. The number of parcels should be reduced to assure a higher income to those remaining.

14. The Isabela area needs special adaptation of the system. In that area the only patches of land suitable for agriculture are the sinkholes (abras). It is convenient to allow the parceleros to use those lands as if they were parceleros, but without obliging them to live in the parcels.

15. In the remaining parts of the Luquillo area an increase in the size of the parcels is necessary. This will probably mean less parcels. Provisions should be made for a more extensive use of the forest by the parceleros.

16. Carite and Guilarte areas need also an increase in the size of the parcels, with a consequent reduction in the number of parcels in the area.

FOOD CONSUMPTION BY PARCELERO FAMILIES

One of the objectives of the parcelero system is to assist the parcelero to produce more and better food crops for home consumption. The facts on production and consumption obtained from the families interviewed are useful in measuring the progress made in the attainment of this objective. It is hoped that the data on consumption will also arouse interest in the improvement of the diet of the parcelero and his family.

Parcelero Families Produced Almost One-half of Food Consumed

The parcelero families interviewed produced at home 47 per cent of the total food consumed (table 42). Practically all the cereals, sugar, fats, and meat and fish consumed were bought. Parcelero families produced at home 57 per cent of the legumes consumed, 82 per cent of the starchy vegetables, 45 per cent of green, leafy vegetables, 95 per cent of fruits, 24 per cent of the coffee, 65 per cent of milk and equivalents, and 96 per cent of eggs.

Variations in Percentage of Food Consumption Produced at Home by Areas

Significant variations were found when the percentages of food consumption produced at home were compared in the different areas. The families in Guilarte and Susúa areas produced at home the lowest proportion of the foods consumed. Each area produced 25 per cent of consumption. The families in Río Abajo area produced 60 per cent. This was the area with the highest percentage of consumption produced at home. The next highest area was Toro Negro with 55 per cent, followed by Luquillo and Carite with 44 per cent each, and then Isabela area with 39 per cent.

The percentage produced at home of cereals, sugar, fats, meats and fish consumption was insignificant in all areas. In legumes the proportion of consumption produced at home ranged from 1 per cent to 55 per cent, in starchy vegetables from 40 to 96 per cent, in green and leafy vegetables from nothing to 93 per cent, in fruits from 32 to 100 per cent, in coffee from nothing to 60 per cent, in milk and equivalents from 45 to 79 per cent, and in eggs from 79 to 100 per cent.

Per Capita Expenditures on Food by Parcelero Families

Expenditures on food are useful in showing in what group of foods are reductions possible. The expenditure per capita for the group of families interviewed amounted to $34.55 (table 45). Of this amount $8.42 were used in sugar, fats, and miscellaneous products. These products could not be produced at home. In cereals the expenditures were $10.20 per capita. Rice and corn meal constituted 72 per cent of this expenditure. There exists a slight possibility of increasing the production of these foods at home. An increased substitution of rice by starchy vegetables is possible to a very limited degree. Already these families in some groups are consuming higher quantities of starchy vegetables. Consequently, a reduction in per capita expenditures in cereals is very difficult to attain. In legumes, the expenditures amounted to $2.20. Beans and pigeon peas constituted 93 per cent of this amount. Some increase in the production of these foods is desirable and possible.

The expenditure per capita in starchy vegetables was $1.35. Of this amount 92 cents were used in potatoes and 43 cents in green bananas, plantains, sweet potatoes, taniers, breadfruit, dasheen, and yucca. A

slightly increased production can practically wipe out this small expenditure. In green and leafy vegetables expenditures were only 26 cents. Unusual efforts should be made to increase the production of these foods not to reduce the insignificant expenditure, but to increase the distressingly low consumption of these protective foods. However, heavy soils and heavy rainfall will limit the production of these foods. Expenditures in coffee, which amounted to $2.79 per capita were rather high. It would be possible in most areas to eliminate completely this expenditure. Most areas are suitable to coffee culture. In fresh milk, evaporated milk, and cheese the expenditures were $1.13. As in the case of green and leafy vegetables the objective with these foods should be to increase production for health reasons. The possibilities of providing a cow to each family deserve considerable study.

The expenditures in meat and fish were $8.20 per capita. There is a slight possibility of reducing the expenditures in this group of food. Six dollars and two cents ($6.02) or 73 per cent of the total expenditures in this group of food was used in foods such as ham, pork feet, codfish, and other imported foods. The difference of $2.18 was used in pork, beef, and chicken meat. This amount could be reduced somewhat if the parceleros are encouraged to raise pigs and chickens. This is very important since the consumption of these needed protein foods was very low.

The expenditures per capita in all foods increased with increases in income. In the group of income of $30 or less expenditures amounted to $29.71, in the group of $30 to $49 to $39.48, and in the group of $50 or more to $50.75. The expenditures per capita increased with increases in income not only for the group of foods which proportion of consumption produced at home was insignificant in the various income groups, but in all

other groups of foods in which a large proportion of consumption was home produced. This would indicate that there is some promise in the increase of home production by making more lands available to the parceleros.

Parcelero Diets Alarmingly Low in Protective Foods

An analysis of the foods consumed by parcelero families shows that progress has been made in the objective of producing more and better food for consumption and in improving the diets of parcelero families. Per capita consumption of all foods by parcelero families amounted to 1,131 pounds yearly (table 44). The consumption of cereals and starchy vegetables was 788 pounds, or 69 per cent of total consumption. The most important single item in the cereal group was rice, with 152 pounds. Green bananas head the group of starchy vegetables with 313 pounds. Consumption of protective foods--dairy products in terms of milk equivalent, eggs, meat, and fish, green and leafy vegetables and citrus fruits--amounted to 135 pounds or only 12 per cent of consumption. Green and leafy vegetables consumption was only 8 pounds, of milk and equivalents 45 pounds, of lean meat and fish 71 pounds, and of eggs less than 4 pounds. According to the standard for a low cost adequate diet, as developed for the United States population, protective foods should constitute 56 per cent of total consumption. Health protective foods constituted 26 per cent of the per capita food supply in Puerto Rico, as estimated in 1937-38 and 21 per cent of the consumption of 436 rural families studied in 1939. Parcelero families consumed even much less quantity of these protective foods. They consumed only 12 per cent of total foods.

Diets of Parcelero Families in the Different Areas

As expected, the area of Río Abajo had the highest consumption in all

foods. This area also had the highest proportion of consumption produced at home. The per capita consumption of all foods amounted there to 1,245 pounds (table 45). Susúa area, with 880 pounds, reported the lowest consumption of all foods. This area had the lowest proportion of consumption produced at home. The consumption in the other areas was as follows: Luquillo area, 1,026 pounds, Toro Negro, 1,219 pounds, Carite 1,250 pounds, Isabela 1,018 pounds, and Guilarte 1,110 pounds.

When the diets in the different areas are compared to the average diet for all the group significant similarities and differences are disclosed. The consumption of cereals and starchy vegetables in all areas constituted the greatest proportion of total consumption. In Luquillo Area the consumption of these two groups of foods constituted 66 per cent of total consumption, in Toro Negro 77 per cent, in Río Abajo 70 per cent, in Carite 81 per cent, in Isabela 62 per cent, in Guilarte 68 per cent, and in Susúa 59 per cent. Consumption of protective foods constituted 12 per cent of total consumption in the Luquillo Area, 11 per cent in Toro Negro, 9 per cent in Río Abajo, 13 per cent in Carite, 12 per cent in Isabela, 11 per cent in Guilarte, and 18 per cent in Susúa. These facts tend to show very little correlation between amount of food available and the quality of the diet. In fact, in Río Abajo, with the highest consumption, protective foods constituted only 9 per cent, the lowest percentage in all groups. On the other hand, in Susúa, with lowest amounts, protective foods constituted the highest percentage.

That there is a possibility for a substitution of rice and other cereals by starchy vegetables is shown by this study. In Susúa, rice consumption was 173 pounds, corn meal 47 pounds, cereal consumption 272 pounds, and

starchy vegetables only 250 pounds. In Río Abajo, rice consumption was 146 pounds, corn meal 17 pounds, cereal consumption 196 pounds, and starchy vegetables 675 pounds.

Diets of Parcelero Families in Different Income Groups

The average amounts consumed per capita of practically all food groups increased with increases in income. The only group of food which did not increase consistently in all income groups was green and leafy vegetables. The most rapid increases in consumption were observed in fruits, milk and equivalents, starchy vegetables, legumes, and coffee. The consumption of these products in the income group of $50 or more was more than twice the consumption in the income group of $30 or less. The consumption of eggs in the high income group was twice the consumption in the low income group, in meats and fish twice, and in green and leafy vegetables 1 1/4 times more.

The consumption of green leafy vegetables, eggs, and milk and equivalents was low in all income groups, compared to dietary standards. This indicates that increases in consumption would be obtained not only by making more money available but by creating conditions favoring the increased production of these products for home consumption and educating these families on the value of these foods on the diet.

Parcelero Program Must Devote More Attention to Food Consumption

The figures on production and consumption obtained from the families interviewed indicate very clearly that more attention should be given to the foods consumed by the parcelero families. In some groups of foods it is possible to increase the proportion of consumption produced at home. Such increases would help the parceleros to reduce the expenditures in food.

The biggest deficiencies in consumption are in products of animal origin and in green and leafy vegetables. There is an extremely high consumption of starchy vegetables in most areas. Dietary improvement by only making more land available to these families is very greatly needed if the products that can be grown on these lands are readily salable. Promise of dietary improvement lies, therefore, in increased attention to livestock and instruction relative to the growing of green and leafy vegetables. The production of both animals and green and leafy vegetables is difficult in the forest areas. Heavy soils and excessive rainfall found in most of the forest areas are unfavorable to the production of green and leafy vegetables. Heavy rainfall and poor grasses make the keeping of cows expensive and production low. Pigs appear to be the animals better adapted to these areas.

Table 1. Approximate total number of parcels in August 1940 and percentage studied

Area	Total number of parcels	Number of parcels studied	Percentage studied is of total number
All areas	795	405	50.6
Luquillo	175	117	66.9
Toro Negro	188	91	48.4
Río Abajo	127	62	48.8
Carite	72	55	76.3
Isabela	149*	34	22.8
Guilarte	59	28	47.5
Susúa	25	18	72.0

*Includes 81 parcels of less than 1 cuerda. Such very small parcels were excluded.

Table 2. Number of houses, number of families, total number of persons, and persons per family, by areas

402 Parcelero families, P. R., August, 1940

Area	Number of houses	Number of families	Percentage	Total number of persons	Percentage	Average number of persons per family
All areas	402	402	100.0	2,550	100.0	6.3
Luquillo	115	115	28.6	767	30.1	6.7
Toro Negro	91	91	22.6	567	22.2	6.2
Río Abajo	62	62	15.4	453	17.8	7.3
Carite	54	54	13.4	293	11.5	5.4
Isabela	34	34	8.5	192	7.5	5.6
Guilarte	28	28	7.0	173	6.8	6.2
Susúa	18	18	4.5	105	4.1	5.8

Table 3. Percentage of total number of families from different places of origin, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of parcelero families surveyed	Same barrio	Other barrio of same municipality	Other municipalities
All areas	402	74	12	14
Luquillo	115	83	10	7
Toro Negro	91	75	11	14
Río Abajo	62	74	7	19
Carite	54	58	9	33*
Isabela	34	74	26	0
Guilarte	28	71	11	18
Susúa	18	67	33	0

*Mostly from neighboring barrio.

Table 4. Average age of parceleros and percentage in specified age groups, by areas

405 Parcelero families, P. R., 1939-40

Area	Total number of parcelero families surveyed	Average age (years)	Age of parcelero (years)			
			30 or less	31-40	41-50	Over 50
		years	per cent			
All areas	405	40	28	29	23	20
Luquillo	117	40	27	27	19	27
Toro Negro	91	38	34	26	29	11
Río Abajo	62	44	18	24	34	24
Carite	55	36	44	29	7	20
Isabela	34	39	18	55	21	8
Guilarte	28	45	14	29	39	18
Susúa	18	40	33	28	17	22

Table 5. Percentage of total number of parceleros with different degrees of schooling, and average number of years in school, by areas

405 Parcelero families, P. R., 1939-40

Area	Total number of parceleros surveyed	Illiterate	Years in school		Average number of years in school
			1-4	Over 4	
All areas	406	47	42	11	1.8
Luquillo	117	50	42	8	1.6
Toro Negro	91	33	48	19	2.5
Río Abajo	62	55	40	5	1.4
Carite	55	55	38	7	1.4
Isabela	34	47	41	12	1.9
Guilarte	28	50	32	18	1.8
Susúa	18	50	39	11	1.7

Table 6. Comparison of important socio-economic factors from study of parceleros, 1939-40, and of agricultural laborers from the tobacco, coffee, and fruit regions in 1936

Socio-economic factors	Parceleros	Agricultural laborers
Average number of persons per family	6.5	6.0
Per cent of families with 8 or more members	29.0	27.0
Per cent bohíos were of total number of houses	44.0	52.0
Per cent of total number of families by size of house		
Less than 200 square feet	59.0	60.9
Over 200 square feet	41.0	39.1
Average number of persons per room	3.2	2.8
Sources of water supply		
Streams and wells	56.0	86.0
Other sources	44.0*	14.0
Per cent of total number of families having latrines	63	46
Marital status of head of families		
Per cent married, church and civil	70.3	79.9
Per cent consensually married	29.7	20.1
Percentage of head of families, by schooling		
None	47	59.1
1-4 years	42	30
Over 4 years	11	10.7
Net family income (dollars)	194	171**
Net family income per capita (dollars)	31	29
Income per capita per day (cents)	9	8
Weekly expenditures for food per family	4.22	3.40
Value of property owned per family (dollars)	79	87
Annual earning from wages	128	102
Percentage value of home production is of total annual income of families	25.0	19.7
Value of home production sold or consumed (dollars)	74	34

*38% from springs and 6% from other sources.

**Rental value of dwelling not included.

Table 7. Percentage of total number of parceleros in different groups according to years of farming experience, by areas

405 Parceleros, P. R., 1939-40

Area	Total number of parceleros surveyed	Years of farming experience			
		Average	5 or less	6-10	Over 10
All areas	405	21	6	17	77
Luquillo	117	20	10	17	73
Toro Negro	91	19	8	24	68
Río Abajo	62	25	0	10	90
Carite	55	20	2	23	75
Isabela	34	21	6	6	88
Guilarte	28	24	0	14	86
Susúa	18	19	11	17	72

Table 8. Percentage of total number of parceleros in different groups according to former social status, by areas

405 Parceleros, P. R., 1939-40

Area	Total number of parceleros surveyed	Former social status			
		Farmer	Agricultural laborer	Sharecropper and agricultural laborer	Other occupations
All areas	405	2	33	61	4
Luquillo	117	6	33	50	11
Toro Negro	91	1	47	51	1
Río Abajo	62	0	13	87	0
Carite	55	0	27	73	0
Isabela	34	0	32	62	6
Guilarte	28	0	54	46	0
Susúa	18	6	11	77	6

Table 9. Percentage of total number of parceleros in different civil status groups, by areas

405 Parceleros, P. R., 1939-40

Area	Total number of parceleros surveyed	Single	Civil or church married	Consensually married	Widowed or divorced
All areas	405	8	61	26	5
Luquillo	117	10	54	29	7
Toro Negro	91	11	54	31	4
Río Abajo	62	8	71	18	3
Carite	55	4	64	31	1
Isabela	34	0	76	12	12
Guilarte	28	4	71	25	0
Susúa	18	6	66	22	6

Table 10. Percentage of total number of parcelero families in various size of family groups, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of parcelero families surveyed	Number of persons per family			
		3 or less	4-7	8-11	12 or more
All areas	402	15	58	25	4
Luquillo	115	11	51	34	4
Toro Negro	91	10	67	21	2
Río Abajo	62	8	52	29	11
Carite	54	17	72	11	0
Isabela	34	25	56	21	0
Guilarte	28	21	50	29	0
Susúa	18	17	67	11	5

Table 11. Percentage of total number of parcelero families in different number of children groups, and average number of children, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of parcelero families surveyed	Number of children				
		None	1-3	4-6	Over 6	Average
All areas	402	9	52	32	7	3.1
Luquillo	115	7	48	36	9	3.3
Toro Negro	91	8	55	33	4	3.1
Río Abajo	62	8	47	32	13	3.6
Carite	54	11	65	24	2	2.3
Isabela	34	12	59	26	3	2.6
Guilarte	28	11	46	39	4	3.0
Sueña	18	17	56	22	5	2.7

Table 12. Total number of children in parcelero families and percentage in school, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of children in parcelero families surveyed	In school 1940-41 course	With no schooling	With some schooling
All areas	579	49	28	23
Luquillo	162	45	30	25
Toro Negro	134	71	16	13
Río Abajo	120	31	48	23
Carite	56	42	35	23
Isabela	42	48	26	26
Guilarte	42	48	17	35
Susúa	24	67	0	33

Table 18. Percentage of total number of houses used by parceleros, by type, by areas

402 Parcelero Families, P. R., 1939-40

Area	Total number of parcelero houses surveyed	Type of house			
		Bohio (completely built of straw or palm sheath)	Timber, straw roofed	Timber, iron roofed	Constructed by Forest Service
All areas	402	44	17	38	1
Luquillo	115	46	15	37	2
Toro Negro	91	54	21	24	1
Río Abajo	62	23	3	74	0
Carite	54	78	7	15	0
Isabela	54	15	32	53	0
Guilarte	28	46	39	11	4
Susúa	18	11	17	72	0

Table 14. Percentage of total number of houses used by parceleros, by size groups, and average size, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of parcelero houses surveyed	Size groups (square feet)			
		Less than 200	201 to 300	Over 300	Average
All areas	402	59	32	9	206.5
Luquillo	115	64	26	10	196.5
Toro Negro	91	62	33	5	201.3
Río Abajo	62	45	29	26	246.0
Carite	54	70	28	2	178.4
Isabela	34	62	38	—	206.1
Guilarte	28	43	46	11	228.4
Susúa	18	39	61	—	202.0

Table 15. Average number of rooms and average number of persons per room in the houses used by parceleros, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of houses used by parceleros surveyed	Average number of rooms	Average number of persons per room
All areas	402	2.0	3.2
Luquillo	115	2.0	3.4
Toro Negro	91	2.0	3.0
Río Abajo	62	2.1	3.3
Carite	54	2.0	2.7
Isabela	34	1.9	2.8
Guilarte	28	1.8	3.4
Susúa	18	2.0	2.9

Table 16. Percentage of total number of parcelero houses by source of water supply, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of parcelero houses surveyed	Spring	Brook	Well	Others
All areas	402	38	51	5	6
Luquillo	115	33	64	2	2
Toro Negro	91	41	55	1	3
Río Abajo	62	74	21	5	—
Carite	54	15	83	—	2
Isabela	54	21	9	15	56
Guilarte	28	39	57	—	4
Susúa	18	22	28	50	—

Table 17. Percentage of total number of parcelero houses with and without latrines, by areas

402 Parcelero families, P. R., 1939-40

Area	Total number of parcelero houses surveyed	Houses with latrines	Houses without latrines
All areas	402	63	37
Luquillo	115	52	48
Toro Negro	91	65	35
Río Abajo	62	76	24
Carite	54	65	35
Isabela	34	79	21
Guilarte	28	57	43
Sustúa	18	56	24

Table 18. Percentage of total number of parcels, in various distance to road groups, and average distance, by areas

405 Parcels, P. R., 1939-40

Area	Total number of parcels surveyed	Distance to road groups (kilometers)				Average distance
		Less than 1.0	1.1-2.0	2.1-3.0	Over 3.0	
All areas	405	41	34	10	15	1.8
Luquillo	117	34	31	11	24	2.2
Toro Negro	91	41	37	9	13	1.5
Río Abajo	62	69	26	2	3	0.7
Carite	55	46	34	13	7	1.3
Isabela	34	32	47	9	12	1.7
Guilarte	28	11	39	18	32	3.0
Susúa	18	33	33	17	17	2.4

Table 19. Percentage of total number of parceleros living on parcel and percentage distribution of the rest of the parcel, by distance from road to house, by areas

405 Parceleros, P. R., 1939-40

Area	Total number of parcels surveyed	Percentage of total number of parceleros living on parcels surveyed	Distance between parcel to road (kilometers)			
			Less than 1.0	1.0-1.9	2.0-2.9	3.0 or over
All areas	405	51	16	11	10	12
Luquillo	117	56	18	12	10	4
Toro Negro	91	36	22	10	8	24
Río Abajo	62	94	5	0	1	0
Carite	55	71	13	13	0	3
Isabela	54	9	6	9	26	50
Guilarte	28	25	18	21	25	11
Susúa	18	11	28	33	22	6

Table 20. Percentage of total number of parceleros, by years working parcel, by areas

405 Parceleros, P. R., 1939-40

Area	Total number of parceleros surveyed	Years working parcel			
		Less than 1	1.0-2.0	2.1-3.0	Over 3.0
All areas	405	5	59	24	15
Luquillo	117	2	58	27	13
Toro Negro	91	2	56	45	17
Río Abajo	62	0	58	13	29
Carite	55	5	84	11	0
Isabela	34	18	29	12	41
Guilarte	28	4	96	0	0
Susúa	18	0	72	28	0

Table 21. Average size of parcels and percentage of total number of parcels in specified size groups, by areas

405 Parcels, P. R., 1939-40

Area	Total number of parcels surveyed	Size of parcel (cuerdas*)				
		Average	6.00 or less	6.01 to 9.00	9.01 to 12.00	More than 12.00
All areas	405	6.8	65	20	12	5
Luquillo	117	7.1	52	24	20	4
Toro Negro	91	5.1	78	21	3	0
Río Abajo	62	10.0	15	34	29	22
Carite	56	6.1	80	16	4	0
Isabela	54	2.2	92	8	0	0
Guilarte	28	5.1	96	4	0	0
Sueña	18	5.2	83	6	11	0

*1 cuerda equals .9712 of one acre.

Table 22. Average number of cuerdas of crops harvested per parcel, by areas (All parcels included)

405 Parcels, P. R., 1939-40

Crop	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
All crops	3.647	3.66	2.38	6.93	3.79	2.59	1.64	3.31
Beans	.670	.79	.07	1.20	.91	.39	.74	.68
Corn	.614	.67	.02	1.30	.95	.24	.42	1.06
Bananas	.570	.22	1.03	1.20	.31	.33	.20	.02
Sweet potatoes	.438	.64	.01	1.10	.28	.40	—	.24
Coffee	.282	.03	.71	.02	.08	1.08	.15	—
Taniers	.225	.20	.19	.53	.24	.02	.12	.04
Rice	.206	.41	—	.05	.59	.02	—	—
Dasheens	.197	.28	.26	.24	.17	—	.01	—
Pigeon peas	.110	.09	—	.27	.10	.09	—	.49
Cowpeas	.108	.09	—	.44	.06	—	—	.15
Tobacco	.068	.06	—	.33	—	—	—	—
Plantains	.054	.01	.06	.19	.06	—	—	—
Yucca	.049	.11	—	.01	—	—	—	.31
Yams	.015	.01	.01	.03	.01	.01	—	—
Other	.045	.05	.02	.01	.05	—	—	.35

Table 25. Average number of cuerdas of crops harvested per farm harvesting by parcel, by areas

405 Parcels, P. R., 1939-40

Crop	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
All crops	3.69	3.66	2.47	6.93	3.79	2.59	1.77	3.31
Corn	1.06	1.06	.40	1.33	1.07	.44	.78	1.18
Rice	1.06	1.05	—	.56	1.16	.75	—	—
Beans	1.05	1.15	.38	1.38	1.04	.60	.86	1.02
Sweet potatoes	.86	.81	.30	1.36	.54	.61	—	.39
Coffee	.85	.22	.99	.17	.36	1.67	.56	—
Bananas	.83	.32	1.30	1.38	.53	.56	.47	.06
Cowpeas	.73	.56	—	1.01	.48	—	—	.33
Tobacco	.67	.98	—	.63	.25	—	—	.04
Taniers	.52	.51	.45	.84	.37	.28	.31	.34
Pigeon peas	.44	.26	—	.52	.48	.50	—	.97
Yucca	.43	.44	—	.16	.12	—	—	.51
Dasheens	.38	.47	.36	.37	.32	—	.45	—
Plantains	.32	.07	.46	.39	.31	—	.05	—
Yams	.19	.35	.14	.45	.06	.50	—	.01
Other	.24	.19	.18	.12	.15	—	.05	1.27

Table 24. Percentage that cuerdas harvested of each crop are of total cuerdas harvested by parceleros, by areas

405 Parcels, P. R., 1939-40

Crop	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
All crops	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Beans	18.4	21.6	3.1	17.7	24.0	15.1	44.7	20.6
Corn	16.9	18.3	.7	18.2	24.7	9.4	25.3	31.7
Bananas	15.6	6.1	43.2	18.0	8.1	12.6	12.3	.5
Sweet potatoes	11.9	17.3	.3	15.8	7.5	15.4	--	7.2
Coffee	7.8	.9	29.6	0.3	2.0	41.8	9.3	--
Taniers	6.2	5.4	8.1	7.6	6.3	.9	7.4	1.1
Rice	5.7	11.1	--	0.7	15.6	.9	--	--
Dasheens	5.4	7.5	10.7	5.4	4.4	--	.8	--
Pigeon peas	3.0	2.5	--	3.9	2.5	3.4	--	14.7
Cowpeas	2.9	2.5	--	6.3	1.6	--	--	3.9
Tobacco	1.9	1.6	--	4.7	0.1	--	--	0.1
Plantains	1.5	0.3	2.8	2.7	1.3	--	0.1	--
Yucca	1.3	3.1	--	0.2	0.1	--	--	9.5
Yams	0.4	0.3	0.5	0.4	0.3	0.3	--	0.1
Millo	0.2	--	--	--	--	--	--	5.9
Others	0.9	1.3	1.0	0.1	1.3	--	0.1	4.7

Table 25. Total cuerdas harvested and average yield per cuerda for crops with more than ten cuerdas harvested by parceleros, by areas

405 Parcels, P. R., 1939-40

Crop	Total cuerdas harvested	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
Beans	271.3	125.0	104.2	—	127.5	172.6	142.6	79.1	93.0
Corn	248.8	277.2	176.6	—	463.0	201.3	—	170.8	209.5
Bananas (number)	230.8	14,966.7	17,372.9	15,780.1	14,059.1	15,187.9	7,229.6	—	—
Sweet potatoes	177.0	1,372.3	1,398.0	—	1,238.8	1,596.5	1,904.9	—	—
Coffee	114.6	104.3	—	91.2	—	—	116.0	—	—
Taniers (yautías)	91.2	879.5	728.0	867.8	933.9	1,021.9	—	1,004.3	—
Rice	83.5	171.5	187.8	—	—	151.4	—	—	—
Dasheens	79.8	2,285.7	2,152.1	1,917.1	2,248.6	—	—	—	—
Pigeon peas	44.5	395.0	467.2	—	373.3	—	—	—	—
Cowpeas	43.6	153.0	91.9	—	175.1	—	—	—	—
Tobacco	27.5	556.5	—	—	613.1	—	—	—	—
Plantains (number)	21.9	5,138.8	—	—	4,871.6	—	—	—	—
Yucca	19.7	991.4	893.8	—	—	—	—	—	—

Table 26. Average yield per cuerda of important crops in parcels, compared to yields from various groups of small farms surveyed by the Agricultural Experiment Station of the University of Puerto Rico

(figures given in hundredweights unless otherwise stated)

Crop	Groups of Small Farms						
	405 parcels, 1939-40	138 Farms, Trujillo Alto-Carolina, 1934-35	99 Farms, Isabela-Aguadilla, 1934-35	88 Farms, Vega Baja, 1933-34	194 Tobacco farms, Aibonito, Barranquitas, Comerío, 1935-36	90 Coffee farms, Coffee area, 1936	96 P. R. R. A. Farms, American Suppliers Land, 1938-39
Beans	1.2	2.3	2.2	1.7	2.5	1.6	1.9
Corn	2.8	5.0	5.3	3.8	5.0	5.4	3.2
Bananas (thousand)	15.0	15.6	—	11.8	15.7	15.9	31.0
Plantains "	5.1	—	—	11.8	—	5.5	10.0
Sweet potatoes	13.7	17.6	18.6	25.0	38.8	23.3	25.1
Taniers	8.8	19.4	—	20.0	—	14.4	30.0
Dasheen	22.8	—	—	—	—	—	—
Rice	1.8	—	—	—	3.0	—	—
Yucca	10.0	—	24.4	11.0	—	—	—
Pigeon peas	4.0	10.1	4.8	—	—	3.4	9.1
Cowpeas	1.5	—	—	3.5	—	—	—
Coffee	1.0	0.8	—	—	—	2.1	—
Tobacco	5.4	4.1	6.3	3.5	7.9	5.0	7.6

Table 27. Total value of crops grown by parceleros, average value per cuerda, average value per parcel, and percentage of total value by use, by areas

405 Parcels, P. R., 1939-40

Area	Total value	Average value per cuerda	Average value per parcel	Percentage of total value			
				Used by family	Sold	Fed to livestock	Other
	dollars	dollars	dollars				
All areas	17,638.80	11.94	43.55	54	34	10	2
Luquillo	4,118.28	9.62	35.19	67	17	14	2
Toro Negro	2,750.73	12.57	30.00	73	15	13	1
Río Abajo	6,747.92	15.71	108.84	34	58	7	1
Carite	2,103.05	10.10	38.23	66	21	10	3
Isabela	1,131.47	12.87	35.28	49	41	4	6
Guilarte	388.84	8.44	13.89	76	7	13	4
Sueña	418.51	7.03	25.25	63	25	10	2

Table 28. Percentage that the value of each crop is of total value of all crops harvested by parceleros, by areas

405 Parcels, P. R., 1939-40

Crop	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
All crops	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bananas	25.5	19.9	45.8	25.9	20.8	9.8	29.3	4.0
Tobacco	10.6	6.1	—	23.3	0.1	—	—	7.4
Beans	9.9	12.3	2.5	7.7	18.6	9.9	24.2	13.1
Coffee	9.4	2.6	30.0	0.8	4.1	46.2	18.6	—
Sweet potatoes	8.5	15.0	0.1	7.9	7.1	15.8	—	5.3
Plantains	6.6	1.3	5.7	12.6	4.9	—	0.8	—
Corn	6.4	6.0	0.1	8.6	7.5	2.9	9.9	16.7
Dasheens	5.7	10.3	7.5	2.9	8.0	—	1.8	—
Taniers	4.4	5.2	4.7	5.7	6.0	0.3	11.8	1.4
Rice	3.0	7.9	—	0.3	9.0	—	—	—
Pigeon peas	2.7	3.2	—	2.5	3.6	2.4	—	17.1
Breadfruit	1.9	3.8	—	0.4	0.9	11.5	—	—
Cowpeas	1.2	1.1	—	2.0	0.9	—	—	5.2
Yucca	0.9	2.1	—	0.1	0.1	—	—	17.0
Yams	0.4	0.3	0.7	0.2	0.5	0.7	—	0.3
Oranges	0.4	—	1.3	—	1.4	—	1.3	—
Millo	0.1	—	—	—	—	—	—	5.1
Others	2.4	2.9	1.6	1.1	6.3	0.5	2.3	9.4

Table 29. Percentage that the value of total sales constitutes of the value of crops grown by parceleros, by areas

405 Parcels, P. R., 1939-40

Crop	All farms	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
All crops	34.0	16.6	12.7	58.4	20.9	40.8	7.1	24.8
Tobacco	100.0	100.0	—	100.0	100.0	—	—	100.0
Plantains	60.2	8.5	24.8	69.1	68.2	—	—	—
Bananas	32.4	24.7	19.0	47.7	33.8	24.6	1.8	40.8
Corn	32.0	13.1	—	55.0	6.0	34.2	5.2	—
Taniers	26.2	15.2	—	57.0	6.7	—	45.1	—
Beans	24.6	17.2	22.1	38.4	21.4	33.9	—	11.2
Coffee	23.9	—	4.4	—	—	68.8	—	—
Cowpeas	21.9	—	—	34.2	2.4	—	—	—
Millo	13.9	—	—	—	—	—	—	14.0
Sweet potatoes	13.7	2.0	—	29.4	7.3	14.3	—	—
Oranges	12.1	—	7.2	—	19.7	—	—	—
Pigeon peas	11.1	—	—	8.7	—	—	—	55.1
Dasheens	9.0	5.2	—	26.9	9.4	—	—	—
Yams	7.9	—	—	37.0	—	—	—	—
Rice	2.8	4.6	—	—	—	—	—	—
Breadfruit	1.6	5.4	—	—	—	—	—	—
Yucca	1.5	—	—	—	—	—	—	2.8
Others	37.5	14.3	34.7	28.0	63.1	11.6	44.0	43.0

Table 29 a. Animal units per parcel (all farms)
405 parcels, P. R., 1939-40

Area	Total	Cattle	Horses, mares, colts	Goats and kids	Swine	Poultry
All	0.64	0.25	0.13	0.04	0.12	0.10
Luquillo	0.92	0.41	0.18	0.05	0.20	0.08
Toro Negro	0.26	0.05	0.04	0.02	0.05	0.10
Río Abajo	0.90	0.36	0.18	0.05	0.15	0.15
Carite	0.46	0.10	0.12	0.01	0.11	0.12
Isabela	0.41	0.18	0.03	0.07	0.08	0.05
Guilarte	0.63	0.21	0.27	*	0.05	0.10
Susúa	0.86	0.47	0.17	0.05	0.07	0.10

*Less than 0.01.

Table 29 b. Percentage of all parcels reporting various classes of livestock

405 parcels, P. R., 1939-40

Area	Parcels reporting				
	Cattle	Horses, mares, colts	Goats	Swine	Poultry
Total	18	14	15	52	96
Luquillo	27	20	18	67	96
Toro Negro	3	4	10	28	96
Río Abajo	31	18	16	66	98
Carite	11	11	5	56	98
Isabela	12	3	35	44	85
Guilarte	14	29	4	39	96
Susúa	22	22	28	44	83

Table 30. Percentage that receipts from each source are of total receipts of parceleros, by areas, and percentage cash receipts are of total receipts

405 Parcels, P. R., 1939-40

Receipts	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
Crops sold	6.7	2.6	2.1	18.8	3.9	8.1	.7	2.7
Livestock sold	1.3	1.5	.6	2.1	1.4	.2	.4	.2
Livestock products sold	0.4	0.2	.5	.4	.8	.1	.3	.2
Forest products sold	1.0	1.9	.5	.6	.8	.5	1.4	.8
Labor off parcel	58.0	56.2	67.9	40.3	59.1	67.5	80.4	76.3
Soil conservation payment	2.0	3.3	.1	2.9	1.4	.9	—	3.7
Livestock increase inventory	2.9	2.5	.5	3.8	2.9	.6	.3	.4
Farm privileges	28.6	31.8	27.8	31.1	30.8	22.1	16.5	15.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cash receipts	69.4	65.7	71.7	65.1	67.1	77.3	83.2	83.9

Table 51. Total amount, average amount per parcel, and average amount received from various employees for labor done off the parcel, by areas

405 Parcels, P. R., 1939-40

Area	Total	Amount received per parcel	From Forest Service	From other Insular or Federal agencies	From private concerns
	dollars	dollars	dollars	dollars	dollars
All areas	52,017.60	128.44	114.98	5.66	7.80
Luquillo	14,509.78	124.02	110.92	2.11	10.99
Toro Negro	11,299.07	124.17	120.00	--	4.17
Río Abajo	8,439.02	136.11	110.93	21.88	3.30
Carite	6,705.12	121.91	119.07	--	2.84
Isabela	3,863.06	113.62	88.31	7.08	18.23
Guilarte	4,204.65	150.16	129.48	15.97	4.71
Susúa	2,996.90	166.49	145.36	--	21.13

Table 82. Percentage that the receipts from work off the parcel from different employees constituted of total income from work off the parcel, by areas
405 Parcels, P. R., 1939-40

Area	From Forest Service	From other Insular or Federal agencies	From private concerns
	per cent	per cent	per cent
All areas	90	4	6
Luquillo	89	2	9
Toro Negro	97	0	3
Río Abajo	82	16	2
Caribe	98	0	2
Isabela	78	6	16
Guilarte	86	11	3
Susúa	87	0	13

Table 35. Average value of farm privileges, total and from various sources, by areas (dollars)

405 Parcels, P. R., 1939-40

Source	All areas	Río Abajo	Luquillo	Carite	Toro Negro	Isabela	Susúa	Guilarte
Total	63.19	104.90	70.20	63.59	50.90	37.13	34.51	30.87
Crops	25.62	37.26	23.64	25.12	21.88	16.36	14.66	10.61
Livestock	2.23	3.60	3.02	2.68	1.62	0.08	0.89	0.45
Livestock products	5.29	13.20	8.40	3.67	1.10	0.25	0.36	0.31
Charcoal or firewood and timber	21.48	27.95	22.87	21.51	18.85	19.03	16.40	16.09
Retail value of dwelling	10.57	22.89	12.27	10.61	7.45	1.41	2.00	2.91

Table 34. Percentage each item of expense constituted of total expenses, and percent cash expenses are of total expenses, by areas

405 Parcels, P. R., 1939-40

Expense	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
Hired labor	12.5	8.1	11.3	13.4	15.4	26.2	13.6	29.8
Unpaid family labor	49.2	61.2	36.1	55.0	33.8	24.2	38.9	26.1
Buildings (repairs, interest, depreciation)	5.1	5.6	6.2	5.3	5.1	1.1	1.3	4.3
Equipment (repairs, depreciation)	9.0	8.2	12.7	5.3	13.0	19.5	9.2	7.0
Seeds and fertilizers bought	7.3	4.2	7.3	9.2	11.0	6.4	10.9	6.4
Livestock bought	4.8	4.9	1.6	7.9	3.8	2.6	2.4	2.3
Livestock inventory depreciation	1.3	1.8	1.0	1.5	1.2	--	0.1	--
Other	10.8	6.0	23.6	2.4	16.7	20.0	23.6	23.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cash expenses	44.7	31.6	56.9	39.2	60.2	73.9	59.5	69.2

Table 35. Average receipts and expenses and net income per parcel, by areas

405 Parcels, P. R., 1939-40

Item	All areas	Río Abajo	Luquillo	Carite	Toro Negro	Isabela	Susúa	Guilarte
Receipts								
Crops sold	$14.65	$65.58	$5.83	$8.02	$3.80	$13.58	$5.78	$1.29
Livestock sold	2.81	7.20	3.27	2.92	1.12	.44	.80	.83
Livestock products sold	.80	1.37	.48	1.58	.90	.05	.36	.51
Forest products sold	2.21	2.02	4.16	1.16	.91	.94	1.71	2.54
Labor off parcel	128.44	136.11	124.02	121.91	124.17	113.62	166.49	160.17
Soil conservation payment	4.49	9.80	7.21	8.00	.09	1.44	8.10	—
Livestock increase inventory	4.52	12.81	5.59	4.20	.96	1.02	.87	.48
Farm privileges	63.19	104.90	70.21	63.59	50.90	37.13	34.32	30.87
Gross farm income	$221.51	$337.79	$220.72	$206.38	$182.85	$168.22	$218.13	$186.69
Expenses								
Hired labor	6.65	12.00	5.45	7.02	3.46	6.58	12.30	5.95
Unpaid family labor	26.20	49.38	41.20	15.39	11.09	6.05	10.77	17.06
Buildings (repairs and depreciation)	2.71	4.74	3.79	2.30	1.91	.29	1.83	.58
Equipment (repairs and depreciation)	4.81	4.71	5.51	5.90	3.91	4.88	2.88	4.05
Seeds and fertilizers bought	3.87	8.27	2.85	5.08	2.31	1.60	2.63	4.76
Livestock bought	2.54	7.04	3.27	1.72	.49	.65	.96	1.06
Livestock inventory depreciation	.71	1.35	1.23	.56	.31	—	—	.06
Other	5.72	2.16	4.00	7.60	7.25	5.00	9.87	10.33
Farm expenses	$53.21	$89.60	$67.28	$45.52	$30.71	$25.05	$41.24	$43.85
Measures of net income								
Net farm income	$168.10	$248.19	$153.44	$160.86	$152.14	$143.17	$176.89	$142.84
Net family farm income	194.30	297.52	194.64	176.25	163.23	149.22	187.66	159.90
Net family farm income less income from work off parcel	65.86	161.41	70.62	54.34	39.06	35.60	21.17	9.73
Net cash income	129.80	184.96	123.66	111.18	113.50	115.56	154.38	129.25

Table 56. Percentage of the parcels in specified net family farm income groups, by areas

405 parcels, P. R., 1939-40

Area	Total number of parcels	Net family farm income group (dollars)		
		Less than 150	150-249	250 and over
		per cent	per cent	per cent
All	405	32	50	18
Luquillo	117	32	50	18
Toro Negro	91	34	64	2
Río Abajo	62	6	31	63
Carite	58	40	55	5
Isabela	34	55	36	9
Guilarte	28	43	50	7
Susúa	18	28	61	11

Table 37. Characteristics of parcels of different income groups classified according to net family farm income

325 parcels, P. R. 1939-40

Item	LUQUILLO			TORO NEGRO			RIO ABAJO			CARITE		
	Less than 150	150 -250	Over 250	Less than 150	150 -200	Over 200	Less than 225	225 -325	Over 325	Less than 150	150 -200	Over 200
Number of parcels	38	58	21	31	30	10	16	28	18	21	20	14
Cuerdas in parcel	6.94	7.19	7.32	4.71	5.24	5.76	7.88	9.68	12.28	6.35	6.23	5.72
Cuerdas harvested	2.60	3.74	5.34	2.58	2.19	3.38	4.72	6.49	9.58	3.13	3.86	4.66
Farm privileges	45.13	68.72	123.30	51.78	55.70	85.20	62.66	101.06	148.98	45.27	58.81	97.91
Income from work off parcel	91.71	123.49	183.93	110.41	122.98	172.97	104.92	119.23	190.11	108.26	118.49	147.28
Hired labor	4.78	5.19	7.35	4.68	2.03	6.85	11.09	10.88	14.58	7.05	7.00	6.99
Value of operator's time	79.08	65.07	76.74	53.89	53.44	38.70	66.56	64.82	73.28	59.49	63.00	53.57
Unpaid family labor	30.20	37.38	71.66	5.95	13.15	16.80	36.16	25.84	97.58	15.75	14.61	15.94
Supply of family labor	0.7	0.8	1.5	0.4	0.6	0.7	0.6	0.7	1.9	0.5	0.5	0.6
Gross farm income	146.00	215.25	371.03	145.29	186.54	279.85	210.26	304.64	503.28	167.69	193.87	282.42
Farm expenses	56.61	60.54	105.77	25.90	32.09	38.77	70.45	60.78	151.47	56.16	38.23	39.96
Net farm income	89.39	154.91	265.26	119.39	154.45	241.06	139.83	243.86	351.81	111.43	155.64	242.46
Net family farm income	119.59	192.29	336.92	125.34	167.58	257.86	175.99	269.70	449.39	127.18	170.25	258.40
Net cash income	78.45	120.87	211.96	93.81	113.41	175.04	109.57	162.56	286.83	82.23	109.81	156.59
Net farm income less income from work off parcel	-2.32	31.42	81.33	8.98	31.52	68.09	34.91	124.63	161.70	3.17	37.15	95.18
Net family farm income less income from work off parcel	27.88	68.80	152.99	14.93	44.65	84.89	71.07	150.47	259.28	18.92	51.76	111.12

Table 38. Relation of total cuerdas in parcel to net farm income and other factors, by areas

Item	LUQUILLO			TORO NEGRO			RIO ABAJO		
	Size groups			Size groups			Size groups		
	5.00 cdas. or less	5.1 to 8.00	More than 8.00	4.00 cdas. or less	4.01 to 5.99	6.00 or more	8.00 cdas. or less	8.01 to 10.0	More than 10.0
Size of parcels	4.2	6.7	10.9	3.6	4.9	7.6	6.1	9.6	15.6
Number of parcels	41	39	37	35	35	25	24	20	18
Agricultural land	3.2	4.6	6.3	3.1	4.5	7.0	5.4	7.8	12.0
Cuerdas harvested	2.7	3.9	4.8	2.3	1.8	3.3	5.0	6.5	10.0
Average age of operator	39.0	41.4	40.5	36.5	37.2	41.5	39.0	47.7	45.0
Farm privilege	69	68	78	45	50	60	95	92	136
Income from work off parcel	120	126	126	118	137	115	126	159	124
Crops sold	5	6	7	2	5	5	35	54	115
Hired labor	8	5	6	3	3	4	8	12	17
Value of operator's time	66	75	75	47	50	60	65	66	77
Unpaid family labor	35	36	53	10	15	7	39	40	74
Supply of family labor	0.6	0.7	1.2	0.3	0.6	0.5	0.8	0.8	1.4
Gross farm income	204	222	235	167	196	185	277	345	415
Farm expenses	59	62	74	28	33	33	68	82	126
Net farm income	145	160	159	139	163	152	209	261	289
Net family farm income	180	196	212	149	179	159	248	301	363
Net farm income less income from work off parcel	25	34	33	21	26	37	83	102	165
Net family farm income less income from work off parcel	60	70	86	31	41	44	122	142	239

Table 39. Relation of cuerdas harvested of crops to net farm income and other factors, by areas
405 parcels, P. R., 1939-40

Item	LUQUILLO			TORO NEGRO			RIO ABAJO		
	Cuerdas harvested groups			Cuerdas harvested groups			Cuerdas harvested groups		
	Less than 2.50	2.50 to 4.24	4.25 or more	Less than 1.50	1.50 to 2.99	3.00 or more	5.00 or less	5.01 to 6.99	7.00 or more
Cuerdas harvested	1.5	3.4	6.4	0.7	2.0	4.7	3.6	6.1	11.5
Number of parcels	45	37	37	35	27	29	23	19	20
Size of parcels	5.9	7.2	8.5	4.9	4.6	5.8	7.4	9.6	13.2
Agricultural land	3.7	4.7	5.9	4.2	4.2	5.5	5.9	7.8	10.9
Average age of operator	35.7	41.7	45.2	34.9	38.9	41.4	41.2	45.1	45.0
Farm privileges	52	78	83	34	52	71	72	111	138
Income from work off parcel	118	139	119	122	135	117	157	107	163
Crops sold	2	3	13	1	4	7	35	59	101
Hired labor	6	5	5	4	5	5	7	8	22
Value of operator's time	67	69	79	51	48	59	67	62	75
Unpaid family labor	15	46	66	8	13	13	52	10	84
Supply of family labor	0.6	0.9	1.1	0.5	0.6	0.4	1.0	0.8	1.7
Gross farm income	187	242	239	160	194	200	268	307	447
Farm expenses	37	77	93	26	29	38	85	40	141
Net farm income	150	165	146	134	165	162	183	267	306
Net family farm income	165	211	212	142	178	175	235	277	390
Net farm income less income from work off parcel	32	26	27	12	30	45	46	160	143
Net family farm income less income from work off parcel	47	72	93	20	43	58	98	170	227

Table 40. Relation of income from work off parcel to net farm income and other factors, by areas
405 parcels, P. R., 1939-40

Item	LUQUILLO			TORO NEGRO			RIO ABAJO		
	Income from work off parcel groups			Income from work off parcel groups			Income from work off parcel groups		
	110.99 or less	111.00 to 124.99	125.00 or more	Less than 110.00	110.00 to 120.99	121.00 or more	Less than 110.00	110.00 to 125.00	More than 125.00
Income from work off parcel	82	118	176	101	117	157	84	118	200
Number of parcels	42	40	36	31	31	29	20	20	22
Size of parcels	6.7	7.3	7.2	4.9	5.3	5.2	10.5	8.8	10.6
Agricultural land	4.5	4.7	4.9	4.5	5.0	4.4	8.4	7.4	8.4
Cuerdas harvested	3.7	3.4	3.7	3.0	2.4	1.7	6.2	6.7	7.8
Average age of operator	40.9	37.4	41.7	39.9	36.8	37.6	43.4	39.5	47.5
Farm privileges	75	64	71	58	49	45	94	98	121
Crops sold	9	8	2	7	2	3	75	54	62
Hired labor	4	6	7	3	5	3	11	8	16
Value of operator's time	82	65	65	57	52	47	68	68	67
Unpaid family labor	42	51	51	9	14	10	56	51	78
Supply of family labor	0.7	0.7	1.0	0.5	0.7	0.4	0.6	0.7	1.5
Gross farm income	179	204	262	169	172	208	287	300	419
Farm expenses	66	57	79	28	35	29	72	62	130
Net farm income	113	147	203	141	137	179	215	238	289
Net family farm income	155	178	254	150	151	189	251	269	367
Net farm income less income from work off parcel	31	29	27	40	20	22	131	120	89
Net family farm income less income from work off parcel	73	60	78	49	34	32	167	151	167

Table 41. Relation between the supply of family* labor and family net farm income and other factors

Item	Luquillo		Río Abajo	
	Supply of family labor groups		Supply of family labor groups	
	None	1 or more	None	1 or more
Supply of family labor	0	1.7	0	1.9
Number of parcels	61	56	30	32
Size of parcels	6.4	8.0	9.1	10.8
Agricultural land	4.4	5.0	7.4	8.7
Cuerdas harvested	3.2	4.2	5.9	7.8
Average age of parcelero	34.5	46.6	39.9	47.7
Farm privileges	61	80	89	120
Income from work off parcel	116	130	121	151
Crops sold	6	6	50	70
Hired labor	6	5	15	9
Value of operator's time	70	73	63	72
Unpaid family labor	10	75	5	91
Gross farm income	202	241	290	383
Farm expenses	33	105	49	128
Net farm income	169	136	241	255
Net family farm income	179	211	246	346
Net farm income less income from work off parcel	53	6	120	104
Net family farm income less income from work off parcel	63	81	125	195

*Number of male persons in the family 15 years or over.

Table 41. Relation between the supply of family* labor and family net farm income and other factors

Item	Luquillo		Río Abajo	
	Supply of family labor groups		Supply of family labor groups	
	None	1 or more	None	1 or more
Supply of family labor	0	1.7	0	1.9
Number of parcels	61	56	30	32
Size of parcels	6.4	8.0	9.1	10.8
Agricultural land	4.4	5.0	7.4	8.7
Cuerdas harvested	3.2	4.2	5.9	7.8
Average age of parcelero	34.5	46.6	39.9	47.7
Farm privileges	61	80	89	120
Income from work off parcel	116	130	121	151
Crops sold	6	6	50	76
Hired labor	6	5	15	9
Value of operator's time	70	73	63	72
Unpaid family labor	10	75	8	91
Gross farm income	202	241	290	383
Farm expenses	33	105	49	128
Net farm income	169	136	241	255
Net family farm income	179	211	246	348
Net farm income less income from work off parcel	53	6	120	104
Net family farm income less income from work off parcel	63	81	125	196

*Number of male persons in the family 15 years or over.

Table 42. Percentage of food consumption produced at home, by areas

Food group	Percentage produced at home by areas							
	All areas	Luquillo	Toro Negro	Río Abajo	Carite	Isabela	Guilarte	Susúa
All foods	47	44	55	60	44	39	25	25
Cereals	4	7	*	3	8	1	2	9
Legumes	37	39	1	55	55	25	21	38
Starchy vegetables	82	83	85	96	74	79	40	52
Green and leafy vegetables	43	27	44	28	93	1	0	30
Fruits	95	45	100	100	100	100	100	82
Sugar	0	0	0	0	0	0	0	0
Coffee	24	11	80	3	18	50	22	0
Milk and equivalents	65	79	44	72	42	45	72	56
Fats	0	0	0	0	0	0	0	0
Meat and fish	5	5	5	5	5	2	3	6
Eggs	96	95	100	100	100	72	100	79
Miscellaneous	*	0	*	0	0	0	0	0

*Less than 1 per cent.

Table 45. Expenditures per capita by food and income groups

Food group	All groups	Income groups (dollars)		
		Less than 30	30 - 49	50 or more
All foods	34.55	29.71	39.48	50.75
Cereals	10.20	9.15	11.45	13.39
Legumes	2.20	1.89	2.61	2.98
Starchy vegetables	1.55	1.16	1.68	1.78
Green and leafy vegetables	.26	.22	.31	.34
Fruits	.00	.00	.00	.00
Sugar	2.75	2.41	2.98	4.11
Coffee	2.79	2.28	3.24	4.68
Milk and equivalents	1.13	.89	1.38	1.93
Fats	4.13	3.53	4.64	5.35
Meat and fish	8.20	6.87	9.54	12.76
Eggs	.00	.00	.01	.03
Miscellaneous	1.54	1.38	1.69	2.40

Table 44. Per capita consumption by parcelero families compared to per capita supply figures for 1937-38 and consumption rates for 436 rural families in 1939

(Figures in pounds)

Food	Per capita consumption, parcelero families	Per capita supply, Puerto Rico, 1937-38	Per capita consumption, 436 families, rural area, 1939
Grand total	1,130.9	971.6	898.0
Cereals - cereal products			
Rice	152.2	144.6	145.7
Corn meal	32.4	5.9	18.7
Wheat flour	20.7	48.2	5.4
Bread	11.6	-*	20.1
Other	13.5	5.6	1.1
Sub-total	230.4	204.3	189.0
Legumes			
Beans	37.4	29.2	37.8
Pigeon peas	7.3	4.8	12.1
Other	4.4	9.4	-
Sub-total	49.1	43.4	49.9
Starchy vegetables			
Green bananas	315.6	142.9	143.8
Plantains	29.2	21.7	33.6
Potatoes	31.2	28.0	22.4
Sweet potatoes	64.5	41.1	86.2
Taniers	25.5	19.3	27.4
Breadfruit	29.7	2.9	14.0
Dasheens	50.2	9.8	13.1
Yucca	8.3	7.1	5.6
Other	7.3	11.1	10.2
Sub-total	567.9	285.7	356.3
Green and leafy vegetables			
Tomatoes	1.4	10.4	4.5
Tomato sauce	2.7	2.2	1.0
Other	1.0	45.8	10.3
Sub-total	5.1	58.4	15.6

(Continued)

Table 44. Per capita consumption by parcelero families compared to per capita supply figures for 1937-38 and consumption rates for 456 rural families in 1939 (Cont.)

(Figures in pounds)

Food	Per capita consumption, parcelero families	Per capita supply, Puerto Rico, 1937-38	Per capita consumption, 456 families, rural area, 1939
Fruits			
Oranges	7.8	27.1	23.6
Other	2.1	107.7	32.6
Sub-total	9.9	134.8	56.2
Sugar	65.3	81.5	61.9
Coffee	16.9	8.5	12.6
Milk and equivalents *			
Fresh milk	38.9	67.7	93.5
Evaporated milk	5.9	4.2	1.3
Cheese	**	1.6	0.5
Butter	***	0.4	**
Sub-total	44.8	73.9	95.3
Fats			
Lard	22.3	16.4	17.6
Oil (vegetable)	3.5	1.9	1.2
Salt pork	12.0	6.6	8.7
Oleomargarine	***	1.5	0.4
Sub-total	37.8	26.4	27.9
Meats and fish			
Ham	7.4	3.2	2.7
Beef	6.6	10.0	2.4
Pork	8.0	6.0	3.5
Chicken	2.2	2.0	3.6
Pork feet	12.2	✓	***
Codfish	34.6	16.0	19.3
Other	0.3	11.5	6.3
Sub-total	71.3	48.7	37.8
Eggs	3.6	4.4	5.6
Salt	32.9	✓	****
Miscellaneous	5.9	3.8	***

*Weight of the finished product has been given for milk substitute.

**Less than 0.1 lb.

***Not included in study.

✓Not separately given.

Table 45. Consumption per capita by areas studied, by food group

Food group	Luquillo	Toro Negro	Río Abajo	Cerite	Isabela	Guilarte	Susúa
All foods	1,026	1,219	1,245	1,250	1,018	1,110	880
Cereals	236	220	196	264	212	268	272
Legumes	45	34	59	57	65	46	72
Starchy vegetables	460	725	676	605	420	486	250
Green and leafy vegetables	9	3	1	10	2	2	5
Fruits	2	17	16	11	4	12	8
Sugar	73	40	89	53	67	70	70
Coffee	15	16	19	18	20	17	17
Milk and equivalents	48	22	56	30	71	68	47
Fats	36	36	37	48	41	32	38
Meats and fish	77	68	58	64	75	70	59
Eggs	4	4	3	4	2	4	7
Miscellaneous	41	36	36	46	39	36	35

Table 46. Per capita consumption by income groups, by food groups

Food group	Income groups (income per capita in dollars)		
	Less than 30	30 - 49	50 or more
All foods	911	1,365	1,837
Cereals	207	255	306
Legumes	39	59	86
Starchy vegetables	421	725	946
Green and leafy vegetables	4	9	5
Fruits	8	11	29
Sugar	57	72	98
Coffee	14	20	29
Milk and equivalents	34	47	104
Fats	32	42	57
Meats and fish	60	80	114
Eggs	3	5	6
Miscellaneous	34	42	57